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EXAMINER	
LIM, STEVEN	

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/726,087	KIM ET AL.	
	Examiner	Art Unit	
	Steven Lim	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 November 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____is/ are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-8, 10-16, 19-21, 23-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Odenwalder et al. (US 5909434) in view of Rikkinen et al. (US 6031827).

4. Regarding Claim 1, Odenwalder et al. discloses a transmission device including a first message generator for encoding first input data of a first bit stream to generate a first frame message having a first frame length (frame generator places signaling data of 32 bits into frames, Fig. 2), a second message generator for encoding second input data of a second bit stream longer than the first bit stream to generate a second frame

message having a second frame length longer than the first frame length (frame generator places user data at multiples of 32 bits into frames, Col. 3, Lines 22-30), a multiplexer for combining the second frame message with the first frame message (Frame Generator includes a multiplexer to place original data with user data or signaling data, Col. 3, Lines 22-30, Fig. 2, Item 46), and a spreader for spreading an output of the multiplexer (multiplexer shows two outputs from one input indicating a spreading function, Fig. 2, Item 46), however Odenwalder et al. fails to disclose replacing the second frame message with the first frame message.

In an analogous art, Rikkinen et al. discloses replacing a frame with different sized slots and different data (Col. 5, Lines 41-56), which enables modularity of the frame.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to replace one set of data with another set of data in order to optimize the available bandwidth.

5. Regarding Claim 2, Odenwalder et al. further discloses the first frame message and the second frame message are multiplexed when the first frame message is generated during transmission of the second frame message (signaling data queued for transmission then signaling data is multiplexed with current transmission of frames including user data, Col. 3, Lines 19-30).

6. Regarding Claim 3, Odenwalder et al. further teaches the multiplexer intermixingly outputs the message (Col. 6, Lines 48-50), however Odenwalder et al. fails

to disclose outputting the message in a sequence of a portion of the second frame message, the replaced first frame message, and a remaining portion of the second frame message.

Examiner takes official notice that outputting a message and frames in any specific order or sequence to be well known in the art.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to output the frames messages in the sequence in order to prioritize the transmission of the second message.

7. Regarding Claim 4, Odenwalder et al. further teaches the multiplexer intermixingly outputs the message (Col. 6, Lines 48-50), however Odenwalder et al. fails to disclose outputting the message in a sequence the replaced first frame message and the second frame message from which a portion corresponding to the first frame message is deleted.

Examiner takes official notice that outputting a message and frames in any specific order or sequence to be well known in the art.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to output the frames messages in the sequence in order to prioritize the transmission of the first frame message.

8. Regarding Claim 5, Odenwalder et al. further discloses a power controller for increasing a transmission power of the remaining portion of the second frame message, following the replaced first frame message, to be higher than that of the first frame message (Col. 13, Lines 5-15, Fig. 2, Item 44).

9. Regarding Claim 6, Odenwalder et al. further discloses the first frame message has a length of 32 bits and the second frame message (user data) has a frame length of 20ms (Col. 3, Lines 18-30), however Odenwalder et al. fails to disclose the first frame message has a length of 5ms.

Examiner takes official notice that it is well known in the art that a frame can have any length and is only restricted by the system on which the frame is transported.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to use a first frame message frame length of 5ms as a design choice when a 5ms frame is needed.

10. Regarding Claim 7, Odenwalder et al. further discloses the second frame generator comprises a CRC generator for generating CRC bits according to the second input data of the second frame length (Col.3, Lines 31-34, Fig. 2, Item 32), a tail bit generator for generating tail bits and adding the generated tail bits to an output of the CRC generator (Col. 3, Lines 33-39, Fig. 2, Item 34), a channel encoder for encoding the tail bit added second frame data at a predefined coding rate (Col. 3, Lines 42-52, Fig. 2, Item 36), and an interleaver for interleaving the encoded frame message by the second frame length (Col. 3, Lines 59-62, Fig. 2, Item 42).

11. Regarding Claim 8, Odenwalder et al. further discloses the interleaver uniformly distribute symbols generated by encoding one data bit over the respective durations of the whole frame (Col. 3, Lines 59-62).

12. Regarding Claim 10, Odenwalder et al. further discloses the spreader comprises an orthogonal code spreader for spreading the frame message output from the

multiplexer with an orthogonal code for a dedicated control channel (orthogonal Walsh code, Col. 4, Lines 24-30), and a pseudo-random noise spreader for spreading an output of the orthogonal code spreader with a PN sequence (Col. 4, Lines 44-50).

13. Regarding Claim 11, Odenwalder et al. discloses data transmission including encoding a first input data of a first bit stream to generate a first frame message having a first frame length (frame generator places signaling data of 32 bits into frames, Fig. 2), encoding second input data (user data) of a second bit stream longer than said first bit stream to generate a second frame message having a second frame length longer than said first frame length (frame generator places user data at multiples of 32 bits into frames, Col. 3, Lines 22-30), combining a portion of the second frame message with the first frame message (Frame Generator includes a multiplexer to place original data with user data or signaling data, Col. 3, Lines 22-30, Fig. 2, Item 46), and transmitting the first frame message in place of the replaced portion of the second frame message (first and second frame are transmitted, Col. 6, Lines 48-50), however Odenwalder et al. fails to disclose replacing a portion of the second frame message with the first frame message.

In an analogous art, Rikkinen et al. discloses replacing a frame with different sized slots and different data (Col. 5, Lines 41-56), which enables modularity of the frame.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to replace one set of data with another set of data in order to optimize the available bandwidth.

14. Regarding Claim 12, Odenwalder et al. further discloses the first frame message and the second frame message are multiplexed when the first frame message is generated during transmission of the second frame message (signaling data queued for transmission then signaling data is multiplexed with current transmission of frames including user data, Col. 3, Lines 19-30).

15. Regarding Claim 13, Odenwalder et al. further teaches the multiplexer intermixingly outputs the message (Col. 6, Lines 48-50), however Odenwalder et al. fails to disclose outputting the message in a sequence of a portion of the second frame message, the replaced first frame message, and a remaining portion of the second frame message.

Examiner takes official notice that outputting a message and frames in any specific order or sequence to be well known in the art.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to output the frames messages in the sequence in order to prioritize the transmission of the second message.

16. Regarding Claim 14, Odenwalder et al. further teaches the multiplexer intermixingly outputs the message (Col. 6, Lines 48-50), however Odenwalder et al. fails to disclose outputting the message in a sequence the replaced first frame message and the second frame message from which a portion corresponding to the first frame message is deleted.

Examiner takes official notice that outputting a message and frames in any specific order or sequence to be well known in the art.

17. It would have been obvious to one having ordinary skill in the art at the time of invention was made to output the frames messages in the sequence in order to prioritize the transmission of the first frame message.

18. Regarding Claim 15, Odenwalder et al. further discloses a power controller for increasing a transmission power of the remaining portion of the second frame message, following the replaced first frame message, to be higher than that of the first frame message (Col. 13, Lines 5-15, Fig. 2, Item 44).

19. Regarding Claim 16, Odenwalder et al. further discloses the first frame message has a length of 32 bits and the second frame message (user data) has a frame length of 20ms (Col. 3, Lines 18-30), however Odenwalder et al. fails to disclose the first frame message has a length of 5ms.

Examiner takes official notice that it is well known in the art that a frame can have any length and is only restricted by the system on which the frame is transported.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to use a first frame message frame length of 5ms as a design choice when a 5ms frame is needed.

20. Regarding Claim 19, Odenwalder et al. further discloses a power controller for increasing a transmission power of the remaining portion of the second frame message, following the replaced first frame message, to be higher than that of the first frame message (Col. 13, Lines 5-15, Fig. 2, Item 44).

21. Regarding Claim 20, Odenwalder et al. further discloses the second frame is generated by generating CRC bits according to the second input data of the second

frame length (Col.3, Lines 31-34, Fig. 2, Item 32), generating tail bits and adding the generated tail bits to an output or second data from the CRC generator (Col. 3, Lines 33-39, Fig. 2, Item 34), encoding the tail bit added second frame data at a predefined coding rate (Col. 3, Lines 42-52, Fig. 2, Item 36), and interleaving the encoded frame message by the second frame length (Col. 3, Lines 59-62, Fig. 2, Item 42).

22. Regarding Claim 21, Odenwalder et al. further discloses symbols generated by encoding one data bit over the respective durations of the whole frame are uniformly distributed (Col. 3, Lines 59-62).

23. Regarding Claim 23, Odenwalder et al. further discloses spreading the frame message output from the multiplexer with an orthogonal code for a dedicated control channel (orthogonal Walsh code, Col. 4, Lines 24-30), and spreading an output of the orthogonal code spreader with a PN sequence (Col. 4, Lines 44-50).

24. Regarding Claim 24, Odenwalder et al. discloses a transmission device including a despreader for despreading a received signal (Col. 7, Lines 3-39, Fig. 5), a first message receiver for deinterleaving the despread signal by the first frame length and decoding the deinterleaved signal to generate a first frame message (SR receiver, Col. 7, Lines 56-62, Fig. 6), and a second message receiver for deinterleaving the despread signal by the second frame length and decoding the deinterleaved signal to generate a second frame message (UR receiver, Col. 7, Lines 56-62, Fig. 6).

25. Regarding Claim 25, Odenwalder et al. further discloses the first frame message and the second frame message are multiplexed when the first frame message is generated during transmission of the second frame message (signaling data queued for

transmission then signaling data is multiplexed with current transmission of frames including user data, Col. 3, Lines 19-30).

26. Regarding Claim 26, Odenwalder et al. discloses a transmission device including deinterleaving the despread signal by the first frame length and decoding the deinterleaved signal to generate a first frame message (SR receiver, Col. 7, Lines 56-62, Fig. 6), and deinterleaving the despread signal by the second frame length and decoding the deinterleaved signal to generate a second frame message (UR receiver, Col. 7, Lines 56-62, Fig. 6).

27. Regarding Claim 27, Odenwalder et al. further discloses the first frame message and the second frame message are multiplexed when the first frame message is generated during transmission of the second frame message (signaling data queued for transmission then signaling data is multiplexed with current transmission of frames including user data, Col. 3, Lines 19-30).

28. Regarding Claim 28, Odenwalder et al. further discloses a power controller for increasing a transmission power of the remaining portion of the second frame message, following the replaced first frame message, to be higher than that of the first frame message (Col. 13, Lines 5-15, Fig. 2, Item 44).

29. Regarding Claim 29, Odenwalder et al. further discloses increasing a transmission power of the remaining portion of the second frame message, following the replaced first frame message, to be higher than that of the first frame message (Col. 13, Lines 5-15, Fig. 2, Item 44).

30. Regarding Claim 30, Odenwalder et al. further discloses a power controller for increasing a transmission power of the remaining portion of the second frame message, following the replaced first frame message, following the inserted first frame message (Col. 13, Lines 5-15, Fig. 2, Item 44).

Terminal Disclaimer

31. The terminal disclaimer filed on 11/20/2007 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US Patent no. 6,768,728 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Response to Arguments

32. Applicant's arguments filed 11/20/2007 have been fully considered but they are not persuasive. Regarding applicant's arguments towards claims 1 and 11, Examiner disagrees because Odenwalder et al. does disclose transmitting frames at any frame length including 20ms or 5 ms (multiple n of information bits for the information bit area in a frame, Col. 3, Liens 39-42) where a frame length can be considered the same as the amount of bits included in that frame. Rikkinen discloses changing a frame with different sized slots which in combination of Odenwalder meet the limitations as broadly claimed in claims 1 and 11. Regarding applicant's arguments towards claims 24 and 26,

Examiner disagrees because Odenwalder et al. discloses transmitting at any frame length (choosing a multiple n of information bits, Col. 3, Lines 39-42) and deinterleaving the signal (Col. 7, Lines 3-39, Fig. 5) which in view of Rikkinen et al. who discloses replacing frames with different slot sizes meets the limitations as broadly claimed in claims 24 and 26. Therefore the limitations as broadly claimed and interpreted in claims 1-30 are met by the prior art as discussed above in the rejection.

Conclusion

33. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Lim whose telephone number is (571) 270-1210. The examiner can normally be reached on Mon-Thurs 9:00am-4:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571)272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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